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well known and these additional characters might serve to render identification easier. For simple identification of the kind of hair, it is not necessary to make thin sections of the leaf. An entire leaflet, taken from an herbarium specimen, may be placed on a slide and examined dry by reflected light, using the low power of the compound microscope.

Of the species examined, the following have the single-armed hairs: *Astragalus Drummondii* Dougl., *A. alpinus* L., *A. Bigelovii* A. Gray, *A. crassicaarpus* Nutt., *A. flexuosus* (Hook.) Dougl., *A. Hypoglottis* L., *A. junciformis* A. Nelson, *A. racemosus* Pursh. Of these the first three have hairs somewhat longer than the rest and longer than those of *A. racemosus* shown in Fig. 1. Only two of the species examined have the double-pointed hairs. These are *Astragalus adsurgens* Pall. and *A. Carolinianus* L.

The purpose of this note is merely to call attention to these trichomes in the hope that systematists may find them useful.

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## SHORTER NOTES

INSECT VISITORS OF SCROPHULARIA. — With reference to Mr. E. W. Berry's notes (TORREYA, 3: 8), it may be said that *Scrophularia* is freely visited in Europe and America by short-tongued bees. On Ruidoso Creek, New Mexico, Professor E. O. Wooton found a *Scrophularia* (I suppose *S. montana*, Wooton) to be freely visited by three species of the bee-genus *Prosopsis*, which I described as *P. Wootoni*, *P. tridentula* and *P. Rudbeckiæ* race *Ruidosensis*. C. Robertson (Trans. St. Louis Acad. 5: 587) cites numerous species of bees, long- and short-tongued, from *Scrophularia* in Illinois. Knuth (Blütenbiologie, 2<sup>2</sup>: 142 ff) gives a summary of the European records.

T. D. A. COCKERELL.

EAST LAS VEGAS, NEW MEXICO.

SOME INTERESTING HEPATICAE FROM MAINE. — In a collection representing fifteen genera and twenty-one species made in the vicinity of Prospect Harbor, Maine, by Mrs. Alice R. Northrop

and studied by the writer with the assistance of Dr. M. A. Howe and Dr. A. W. Evans, *Cephalozia Francisci* (Hook.) Dumort. is recognized for the first time as an American species. *Cephalozia Francisci* is somewhat rare in Europe, though it has been found in England, Ireland, France, Denmark and Germany. Various botanists have mentioned and described it, Sir W. J. Hooker being the original describer under the name of *Jungermannia Francisci* in his British Jungermanniae, *pl.* 49. His full description and figures agree with our specimen except in regard to the perianth, which he says is "evidently toothed," ours being simply repand as Spruce later described it in his work on *Cephalozia* (p. 49). The perianths in our specimen agree well with those of two specimens from the Rheinprovinz in the herbarium of the New York Botanical Garden. In Europe the species is said to be "in fruit," gemmiparous also, in spring and early summer; here, at this Maine station, it bears gemmae, immature androecia, and perianths with immature sporogonia, in August. This locality in Maine proved also a new station for *Frullania Tamarisci* (L.) Dumort., which is rare in this country; and *Scapania curta* (Mart.) Dumort., also, was found growing there with *Riccardia latifrons* Lindb. and *Cephalozia lunulaefolia* Dumort., evincing the same choice of associates as when found a few years ago on the other side of the continent, at Sisson, Siskiyou Co., California, by Dr. Howe.

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## REVIEWS

### **The Influence of Light and Darkness upon Growth and Development.\***

So incomplete and contradictory conclusions have been obtained upon this subject by various authors since the time of John Ray, 1686, that it is fortunate that this question has been at last taken up in a systematic and comprehensive manner. In the present memoir, Doctor MacDougal has presented an exceptionally important contribution to science. The work is a model of its kind not only in the scope of the undertaking, but in the

\* MacDougal, D. T. The Influence of Light and Darkness upon Growth and Development. Mem. N. Y. Bot. Garden 2: i-xiii + 1-319. *f.* 1-176. 20 Ja. 1903.